

Notice of Allowability

Application No.

10/748,967

Examiner

Phuong Phu

Applicant(s)

NAIR, SATHIAN

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 9/19/07.
2. ☒ The allowed claim(s) is/are 2-11 and 13-30.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date <u>9/19/07</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed on 9/19/07. Accordingly, claims 2-11 and 13-30 are currently pending; and claims 1 and 12 are canceled.

REASONS FOR ALLOWANCE

2. Claims 2-11 and 13-30 are allowed.

3. The following is an examiner's statement of reasons for allowance:

-Regarding independent claim 4, none of prior art of record teaches or suggests a method as claimed. Aslanis et al (5,901,180), teaches the claimed method except he fails to teach a procedure of estimating carrier phase by comparing a phase, associated with one or more points from a communication constellation, with a phase value that is expected assuming phase lock wherein the phase comprises an average phase. In Aslanis et al, the phase is directly provided from a decoded pilot tone, and the result of the comparison is further smoothened/averaged by control loop filters to provide a control voltage for controlling a VCXO to generate the estimated carrier phase. As such, there is no need in Aslanis et al for the phase to be averaged or to comprise an average phase for the comparison. It would not have been obvious for one skilled in the art to implement Aslanis et al in view of other prior art for leading such the implementation to the claimed invention.

-Regarding independent claim 6, none of prior art of record teaches or suggests a method as claimed. Aslanis et al teaches the claimed method except he fails to teach a procedure of estimating carrier phase by comparing an average phase of a sequence of a plurality of points from a communication constellation with an average phase value that is expected assuming phase lock. In Aslanis et al, the phase is directly provided from a decoded pilot tone, and

Art Unit: 2611

directly compared with a phase value; and the result of the comparison is further smoothened/averaged by control loop filters to provide a control voltage for controlling a VCXO to generate the estimated carrier phase. As such, there are no need in Aslanis et al for the phase to be averaged or comprise an average phase for the comparison and no need for the phase value to be averaged. It would not have been obvious for one skilled in the art to implement Aslanis et al in view of other prior art for leading such the implementation to the claimed invention.

-Regarding independent claim 7, none of prior art of record teaches or suggests a method as claimed. Aslanis et al teaches the claimed method except he fails to teach a procedure of determining a local phase and determining the carrier phase by applying carrier phase correction factor to the local phase, wherein as specified in the specification of the instant application, applying carrier phase correction to the local phase is performed by combining the carrier phase correction factor with the local phase (see figure 4). In Aslanis et al, the carrier phase correction factor is in term of a control voltage to control a VCXO to determine the carrier phase. It would not have been obvious for one skilled in the art to implement Aslanis et al in view of other prior art for leading such the implementation to the claimed invention.

-Regarding independent claim 10, none of prior art of record teaches or suggests a method as claimed. Aslanis et al teaches the claimed method except he fails to teach a procedure of iterating through receiving additional carrier phase estimation information and re-estimating the carrier phase based on the additional carrier phase information until a comparison indicates that the property of the received information is within a threshold of the value expected assuming phase lock. It would not have been obvious for one skilled in the art to additionally implement

Art Unit: 2611

Aslanis et al in view of other prior art with such the procedure for leading the implementation to the claimed invention.

-Regarding independent claim 13, none of prior art of record teaches or suggests an article, as claimed. Aslanis et al teaches the claimed invention except he fails to teach a procedure of determining a local phase and determining the carrier phase by applying carrier phase correction factor to the local phase, wherein as specified in the specification of the instant application, applying carrier phase correction to the local phase is performed by combining the carrier phase correction factor with the local phase (see figure 4). In Aslanis et al, the carrier phase correction factor is in term of a control voltage to control a VCXO to determine the carrier phase. It would not have been obvious for one skilled in the art to implement Aslanis et al in view of other prior art for leading such the implementation to the claimed invention.

-Regarding independent claim 20, none of prior art of record teaches or suggests an apparatus, as claimed. Aslanis et al teaches the claimed invention except he fails to teach device(s) of determining a local phase and determining the carrier phase by applying carrier phase correction factor to the local phase, wherein as specified in the specification of the instant application, applying carrier phase correction to the local phase is performed by combining the carrier phase correction factor with the local phase (see figure 4). In Aslanis et al, the carrier phase correction factor is in term of a control voltage to control a VCXO to determine the carrier phase. It would not have been obvious for one skilled in the art to implement Aslanis et al in view of other prior art for leading such the implementation to the claimed invention.

-Regarding independent claim 27, none of prior art of record teaches or suggests an apparatus, as claimed. Aslanis et al teaches the claimed invention except he fails to teach

Art Unit: 2611

device(s) of determining a local phase and determining the carrier phase by applying carrier phase correction factor to the local phase, wherein as specified in the specification of the instant application, applying carrier phase correction to the local phase is performed by combining the carrier phase correction factor with the local phase (see figure 4). In Aslanis et al, the carrier phase correction factor is in term of a control voltage to control a VCXO to determine the carrier phase. It would not have been obvious for one skilled in the art to implement Aslanis et al in view of other prior art for leading such the implementation to the claimed invention.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 571-272-3009. The examiner can normally be reached on M-F (8:00 AM - 4:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Phuong Phu
Phuong Phu
10/04/07

**PHUONG PHU
PRIMARY EXAMINER**

Phuong Phu
Primary Examiner
Art Unit 2611